

Application No.: 10/735,521  
Preliminary Amendment

PATENT  
Page 2 of 24

Amendment to the Claims:

Claims 1-50 (cancelled).

Please amend new claims numbered 1-111 presented on March 24, 2005, as follows:

51. (currently amended) An apparatus for distributing one or more channels included within each of a plurality of N signals to one or more output devices, the apparatus comprising:

a crosspoint switch having a plurality of N crosspoint switch inputs and a plurality of crosspoint switch outputs, each of the N crosspoint switch inputs coupled to receive one of the N signals, the crosspoint switch operable to switchably couple any of the N crosspoint switch inputs to any one or more of the crosspoint switch outputs, wherein one or more channels included within a first of the N signals overlaps in frequency with one or more channels included within a second of the N signals; and

a plurality of band translation devices, each having an input coupled to a respective one of the crosspoint switch outputs and an output configured to couple to one or more output devices, each of the one or more band translation devices operable to pass one or more of the channels as supplied thereto, or to frequency translate one or more of the channels as supplied to respective one or more channels,

wherein at least a portion of the crosspoint switch or at least a portion of one or more of the plurality of band translation devices comprises a differential signal path.

52. (currently amended). The apparatus of claim 51, wherein the one or more channels included within one or more of the N signals comprises respective one or more frequency division multiplexed channels, each of the one or more frequency division multiplexed channels having a different carrier frequency.

53. (currently amended). The apparatus of claim 51, wherein the one or more channels included within one or more of the N signals comprises at least one multiplexed

Application No.: 10/735,521  
Preliminary Amendment

PATENT  
Page 3 of 24

channel, the multiplexed channel operating at a predetermined carrier frequency and comprising the content of two or more channels.

54. (currently amended) The apparatus of claim 53, wherein the content of the two or more channels comprises digital content, and wherein the multiplexed channel comprises a multiplexed digital channel.

55. (currently amended) The apparatus of claim 51, wherein at least one of the N signals comprises a plurality of frequency bands.

56. (currently amended) The apparatus of claim 51, wherein the crosspoint switch and the plurality of band translation devices are included within an integrated circuit.

57. (currently amended) The apparatus of claim 51, wherein two or more band translation devices are coupled to the same local oscillator source.

58. (currently amended) The apparatus of claim 51, wherein two or more band translation devices are coupled to different variable local oscillator sources.

59. (currently amended) The apparatus of claim 51, wherein the output of each one of the band translation devices is configured to couple to a single output device.

~~40~~ 60. (currently amended) The apparatus of claim 51, wherein the outputs of two or more of the band translation devices are coupled together.

~~44~~ 61. (currently amended) The apparatus of claim ~~40~~ 60, wherein the outputs of the two or more band translation devices are configured to couple to a single output device.

Application No.: 10/735,521  
Preliminary Amendment

PATENT  
Page 4 of 24

~~12~~ 62. (currently amended) The apparatus of claim 51, wherein the output of at least one of the band translation devices is configured to couple to a plurality of output devices.

~~13~~ 63. (currently amended) The apparatus of claim ~~40~~ 60, further comprising a signal combiner having (i) a plurality of inputs coupled to respective plurality of band translation device outputs, and (ii) an output coupled to one or more output devices.

~~14~~ 64. ( new) The apparatus of claim ~~13~~ 63, wherein the output of the signal combiner is coupled to each of the one or more output devices.

~~15~~ 65. (currently amended) The apparatus of claim ~~13~~ 63, wherein the output of the signal combiner is coupled to a first subset of the one or more output devices, the apparatus further comprising a second signal combiner having a plurality of inputs coupled to respective plurality of band translation device outputs, and an output coupled to a second subset of one or more output devices.

~~16~~ 66. (currently amended) The apparatus of claim ~~13~~ 63, further comprising a respective plurality of filters, each respective filter coupled between a band translation device output and a signal combiner input.

~~17~~ 67. (currently amended) The apparatus of claim ~~16~~ 66, wherein the plurality of filters are selected from the group consisting of a high pass filter, a lowpass filter, a bandpass filter, and a diplexer.

~~18~~ 68. (currently amended) The apparatus of claim ~~16~~ 66, wherein the plurality of filters are implemented separately from the crosspoint switch.

Application No.: 10/735,521  
Preliminary Amendment

PATENT  
Page 5 of 24

~~19~~ 69. (currently amended) The apparatus of claim ~~46~~ 66, wherein the plurality of filters, the crosspoint switch and the plurality of band translation devices are monolithically formed on an integrated circuit.

~~20~~ 70. (currently amended) The apparatus of claim ~~4~~ 51, further comprising a plurality of variable gain amplifiers coupled to the crosspoint switch, each of the plurality of variable gain amplifiers operable to apply gain or attenuation to a signal input thereto.

~~24~~ 71. (currently amended) The apparatus of claim ~~20~~ 70, wherein each of the plurality of variable gain amplifiers comprises an input coupled to receive a respective one of the N signals, a control input, and an output coupled to one of the inputs of the crosspoint switch, wherein each of the variable gain amplifiers is operable, responsive to a control signal received at the control input, to apply gain or attenuation to a signal input thereto.

~~22~~ 72. (currently amended) The apparatus of claim ~~24~~ 71, further comprising a respective plurality of detectors, each detector having an input coupled to the input of one variable gain amplifier and an output coupled to the control port of said variable gain amplifier, each of the detectors operable to control the gain or attenuation level of the variable gain amplifier as a function of the power detected.

~~23~~ 73. (currently amended) The apparatus of claim ~~24~~ 71, further comprising a respective plurality of detectors, each detector having an input coupled to the output of one variable gain amplifier and an output coupled to the control port of said variable gain amplifier, each of the detectors operable to control the gain or attenuation level of the variable gain amplifier as a function of the power detected.

~~24~~ 74. (currently amended) The apparatus of claim ~~24~~ 71, wherein the crosspoint switch, the plurality of band translation devices, and the plurality of variable gain amplifiers are included within an integrated circuit.

Application No.: 10/735,521  
Preliminary Amendment

PATENT  
Page 6 of 24

~~25~~ 75. (currently amended) The apparatus of claim ~~4~~ 51, further comprising at least one LNB converter operable to provide the N signals.

~~26~~ 76. (currently amended) The apparatus of claim ~~4~~ 51, wherein said crosspoint switch comprises a first crosspoint switch, said plurality of band translation devices comprises a plurality of first band translation devices, and said output devices comprise first output devices, the apparatus further comprising:

a second crosspoint switch having a plurality of N crosspoint switch inputs and a plurality of crosspoint switch outputs, each of the N second crosspoint switch inputs coupled to either: (i) a respective one of the first crosspoint switch inputs, or (ii) a respective one of the first crosspoint switch outputs, each of the second crosspoint switch outputs configured to couple to one or more second output devices, the second crosspoint switch operable to switchably couple any of the plurality of N second crosspoint switch inputs to any one or more of the plurality of second crosspoint switch outputs; and

a plurality of second band translation devices, each having an input coupled to a respective one of the second crosspoint switch outputs and an output configured to couple to one or more second output devices, each of the one or more second band translation devices operable to pass one or more channels as supplied thereto, or to frequency translate one or more of the channels as supplied to respective one or more channels,

wherein at least a portion of the second crosspoint switch or at least a portion of one or more of the plurality of second band translation devices comprises a differential signal path.

~~27~~ 77. (currently amended) The apparatus of claim ~~26~~ 76, wherein the second crosspoint switch and the plurality of second band translation devices are included within a second integrated circuit.